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ABSTRACT

This report focuses on the integration of computers in elementary and middle school instruction. Based on interviews and on-site visitations with teachers using computers in conjunction with their regular instruction, seven lessons are described: (1) desktop publishing for grades 4 and 5; (2) interpretive writing for any grade level; (3) student-authored word problems for grades 6, 7, and 8; (4) long-distance telecommunications for grades 3 and up; (5) teaching students how to learn for grades 4 and 5; (6) nutrition for grades 6, 7 and 8; and (7) mapping the Western Hemisphere for grades 5 and 6. Included for each lesson are a narrative description and lesson plan which outlines target audience, hardware, software, instructional purpose, objectives, pre-activities, computer activities, follow-up activities, time required, schedule, management suggestions, instructional materials, and teacher preparation. For some lessons, examples of student work and other ideas are also provided. A directory of producers of software mentioned in the report is attached. (MES)

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THE Northwest Regional Educational Laboratory

TECHNOLOGY PROGRAM

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IDEAS FOR INTEGRATING THE MICROCOMPUTER WITH INSTRUCTION

Zita Podany

December 1989

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INTRODUCTION

The demands of an Information Age are all too clear --we will need individuals who will be able to think, disseminate information, solve problems, and who will not be afraid to adapt to change. Ultimately, it is this process that will empower students to succeed and not drop out of the learning process. All these teachers share a common viewpoint which believes that providing meaningful experiences for today's students should no longer be looked on as an exception. Rather, it should be viewed as an imperative, allowing students to become independent thinkers and to take responsibility for their own learning.

This Promising Practices report focuses on the integration of computers in elementary and middle school instruction. Interviews were conducted with teachers who are actually using computers in conjunction with their regular instruction.

On-site visitations were conducted to collect information on how computers are assisting the educational process. Each teacher was more than willing to share his/her ideas, thoughts, comments, and philosophies about using the computer to assist students in developing higher cognitive processes. The enthusiasm and energy that each teacher generates is absolutely infectious and evident in the class dynamics--students were actually excited about learning and even my presence did not distract them from staying on task. Each teacher stresses that the computer is an invaluable tool and, if used appropriately, can empower students to take charge of their own learning. With word processing and telecommunications, students can learn to appreciate writing as a form of meaningful communication impacting not just individuals in the classroom, but people all over the world. The utilization of computers has enabled teachers to impress upon their students the need to communicate information with clarity and complete thought. It is a vision they share freely.

The following pages include a description of how each teacher uses computers in his/her classroom. With the descriptions are lesson plans and, in some cases, samples of student work and other ideas. Some of the attached lessons are part of a unit or a year-long program. In many instances the teachers are using the computers--they have found it to be a tool that frees them from many time-consuming tasks and allows them to do the thing they most enjoy--to teach.

Sherie Knutsen
Clarendon Elementary School
93025 N. Van Hooten
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280-6260

DESKTOP PUBLISHING

Sherie Knutsen, teacher and team leader at Clarendon Elementary School in North Portland, finds the computer to be an invaluable management tool. Her busy schedule is filled with preparing lesson plans, teaching and motivating students, generating reports, composing newsletters, and conducting workshops, and as she states, "I don't know what I'd do without a computer. . . "

She uses AppleWorks for publishing student work, grading, designing lesson plans and worksheets, writing reports, creating form letters, and printing mailing labels. The Printshop program is used to generate report covers, worksheets, and personalized motivational certificates. Her students are in the TIMEX program--students who are below grade level and have been identified as being at-risk. The personalized certificates are used to motivate and build their self-esteem.

In the past, students have used AppleWorks to publish their stories. This year they will be using Publish It! (Time Works). Prior to typing in their stories, students are given instruction in the basics of care and management of disks and computers, keyboarding techniques and AppleWorks commands. Because of limited availability of computers, students write their stories on paper, when the final draft is written, computer time is scheduled so the student can type in his or her story.

Sherie has noticed that students tend to be more fluent in generating ideas and writing longer stories when they have a chance to use the computer. Editing and revising their masterpieces is not as threatening to them when using word processing instead of paper and pencil. A lot of the kids enjoy moving blocks of text around in their document and will read and reread their stories just to make sure everything is where it is supposed to be. They also experience a big thrill in seeing their published stories -- the final product of all their efforts, really impresses them; the next time around they will write even more.

WHAT WORKS FOR YOU?

Using Computers in the Classroom

SUBMITTED BY

Name: Sherie Knutsen

School Address: Clarendon Elementary School
93025 N. Van Hooten
Portland, Oregon 97203

Phone: 503/280-6260

TARGET AUDIENCE

Grade: 4th & 5th **Ability Level:** all groups

Comments: All students can learn at any level.

HARDWARE

Type: Apple IIe
Apple GS

Peripherals: Imagewriter II printers

Arrangement: Twenty-five computers are available in the lab. Later on they will be moved around from classroom to classroom.

SOFTWARE

Title(s):	**Publisher(s):**
AppleWorks	CLARIS
Printshop	Broderbund
Publish It!	Time Works

Number of copies: One for each computer

PROJECT DESCRIPTION

Title or brief description: Desktop Publishing

Instructional purpose:
- Produce and publish their own writing
- Facilitate self-esteem development
- Cooperative learning

Objectives:
1. Motivate students to express themselves through the written word
2. Promote fluency of ideas and thoughts
3. Grasp concept of paragraphing, which will in turn carry over to their writing

DESCRIPTION OF THE LESSON

Pre-activities:
- Discussion about computers and what they can do--they give you what you ask for
- Discussing and practicing the writing process
- Booting a computer
- A little keyboarding
- Train a few students to boot the computers and manage disks and they will train and assist others

Computer Activities:
- Disk management
- Word processing: formatting, saving, deleting, retreiving, moving text
- Students will type in their stories when they are ready

Follow-up Activities:
- Publish their work. Display.
- Send newsletters home to parents

MANAGEMENT

Total Time: 2-3 months

Schedule: 3 hours per week-- for writing, revising, and editing their stories

Suggestions: Teacher needs to stop trying to do everything themselves. Teach a few students to be computer "experts"--they will then help others. Impress upon the students not to be afraid of the computer losing their work. Know the software. Don't try to teach everything at once.

TEACHER PREPARATION

List of instructional materials:
- Paper keyboards
- Computer/printers/paper
- Word processing software/other software
- Data disks

Teacher "To Do" list:
- Find enough copies of AppleWorks
- Round up computers and printers
- Teach the writing process away from the computer
- Train a few "computer experts"
- Help students with writing, revising and editing
- Collect stories on disks and publish them

Dr. Bill Nicolay
Martin Luther King Elementary School
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206/696-7242

INTERPRETIVE WRITING

Bill Nicolay's seven students, all hearing impaired, have plenty of opportunity to use the computer in conjunction with their classwork. Six computer stations, each with a different computer, are located around the periphery of the class. Using Spellicopter on the Apple IIGS computer, students can practice their spelling words and sentences. Using a Toshiba-based computer, vocabulary skills can be reinforced with a program designed and created by Dr. Nicolay. A host of other software is used to help students develop and reinforce necessary skills. Dr. Nicolay is quick to point out that software which allows the user to input their own data will have lasting value throughout the year; whereas, with finite programs, the novelty of the program soon wears off.

Word processing is one of those versatile packages that not only has lasting value, but can be used in all segments of the curriculum. With word processing capabilities, students in the class are developing interpretive writing skills. Students are given a "Jack and Julie" worksheet (a standard in the hearing impaired curriculum) that contains several picture frames at the top. However, any picture, series of pictures, or photographs will do just as well for this lesson. The assignment is to write three factual statements about each picture. Once this task is completed, they are encouraged to write an imaginative story about the pictures.

Since the class is small enough, students can compose, edit, and revise their stories at the computer. When a student finishes a story, Dr. Nicolay makes another copy of it right underneath the existing one for purposes of helping the student correct grammatical mistakes and to determine the type of needed remediation. The emphasis during the correction phase is on the proper usage of grammar and not so much on the content of the story, although at times he will check to determine if transference of skills and knowledge from other curricular areas has occurred.

Writing three factual statements about the pictures helps students develop not only thinking and observing skills, but also the ability to differentiate between fact and fiction. Prior to correcting a student's story, the three statements about each picture are evaluated according to whether they fit the criteria of being factual. If a student is having difficulty, a discussion will ensue about the difference between factual and imaginative writing. Over a period of time, each student 's ability for self-expression increases; his/her writing will tend to flow more naturally and run-on sentences diminish in frequency. The computer is their tool, empowering them to think creatively and interpretively.

Using the computer to meaningfully occupy students in learning activities enables the teacher to help students individually. Dr. Nicolay can generate individualized lesson plans and worksheets for each student much more easily with the aid of a computer. The ability to change fonts and font sizes on the Macintosh has enabled him to produce worksheets with sign language hand shapes.

WHAT WORKS FOR YOU?

Using Computers in the Classroom

SUBMITTED BY

Name: Bill Nicolay

School Address: Martin Luther King Elementary School
4801 Idaho St.
Vancouver, Washington 98661

Phone: 206/696-7242

TARGET AUDIENCE

Grade: varying levels **Ability Level:** any ability level

Comments: This particular class has hearing impaired students, however, this lesson can be used with any group of students

HARDWARE

Type: Brother dedicated word processor
Apple GS, Mac SE, Apple IIe
Toshiba

Peripherals: dot matrix printer

Arrangement: Six computers are located in the classroom

SOFTWARE

Title(s): Any word processing software will do **Publisher(s):** any

Number of copies: One for each computer

PROJECT DESCRIPTION

Title or brief description: Interpretive Writing

Instructional purpose:
- Developing grammar skills—spelling, punctuation, sentence construction
- Motivate students to write more with the use of a computer

Objectives:
1. Learning correct usage of grammar
2. Empower students to express themselves
3. To think about and observe the world around them as it really is

DESCRIPTION OF THE LESSON

Pre-activities: Keyboarding techniques--allowing students to gain familiarity with the keyboard and computer
Prescriptive analysis of student needs and abilities

Computer Activities: Word processing — looking at and writing stories about what they see in a series of pictures

Follow-up Activities: Grammar correction and discussion about factual vs. imaginative writing as it pertains to their stories
Modeling the process of self-expression and in seeing the world as it is

MANAGEMENT

Total Time: ongoing process throughout the year

Schedule: 10-20 minutes per day for writing
20 min. on correction day

Things to watch out for: Students should have the necessary computer operation skills. Watch for the child who doesn't want to participate and will sit in front of the computer doing nothing. Don't take the child off of the project. Avoid giving too much help, and be patient.

TEACHER PREPARATION

List of instructional materials:

- "Jack and Julie" worksheets (any picture or series of pictures will do just as well)
- Computer/word processing software
- Printout of student work
- Printer

Teacher "To Do" list:

- Assess student abilities and needs (ongoing)
- Check to see if there's generalization from other parts of the curriculum
- Model the process of using knowledge and ideas from all parts of the curriculum to enrich one's self-expression

Joan Miller
Fernwood Middle School
1950 N. E. 33rd
Portland, Oregon 97212
280-6480

STUDENT-AUTHORED WORD PROBLEMS

Joan Miller, teacher of mathematics at Fernwood Middle School, has found a way of reinforcing problem-solving skills with the use of word processing software. Students sometimes experience difficulty in applying various strategies to word problems because they are unable to focus in on the important information found within the problem. By writing their own problems, students can then get a better understanding of what story problems are all about.

In teaching the process of solving word problems, students must first gain experience solving ready-made problems found in textbooks or from other sources. The class practices solving a few together before attempting those found in their texts. When they have had sufficient practice, the class makes up a word problem with the teacher writing it on the overhead and analyzes it in terms of solvability and whether or not the solution makes sense in relation to the context of the problem. This exercise enables students to dissect a problem and focus on the necessary details that go into making a word problem.

With only one Macintosh Plus available to the whole class, students need to compose and test their word problems prior to typing it into a word processing document formatted by the teacher. When all the story problems have been collected, they will be printed out in either a newsletter or booklet format. The finished product is distributed to the students and to other classes. The students are encouraged to solve each other's problems.

Initially, students will try to write very complex word problems but once they realize the wide extent of the audience, they take greater pains to create problems that make sense, hold high interest appeal and are solvable. By writing and testing their story problems, they are able to develop a "number sense" and a better understanding of the strategies involved in solving word problems.

WHAT WORKS FOR YOU?

Using Computers in the Classroom

SUBMITTED BY

Name: Joan Miller

School Address: Fernwood Middle School
1950 N. E. 33rd
Portland, Oregon 97212

Phone: 503/280-6480

TARGET AUDIENCE

Grade: 6, 7, 8 **Ability Level:** any ability level

Comments:

HARDWARE

Type: Mac Plus **Peripherals:** dot matrix printer

Arrangement: One computer for the whole class

SOFTWARE

Title(s): Microsoft Word 2.0 **Publisher(s):** Microsoft

Number of copies: one

PROJECT DESCRIPTION

Title or brief description: Student-Authored Word Problems

Instructional purpose:
- Learning to solve word problems
- Developing self-esteem

Objectives:
1. Students will learn to solve word problems in math
2. Students will appreciate and gain experience in using the computer as a tool to communicate their ideas about math
3. Encourage students to use their "number sense" in developing problems that make sense and are reasonable to solve
4. Develop problem-solving strategies

DESCRIPTION OF THE LESSON

Pre-activities:
- Solving word problems in the textbook and other sources--including teacher-made problems
- Discussing strategies in solving word problems
- Focusing on the various components present in solvable problems.
- Practice writing and solving word problems

Computer Activities: Type perfected word problems into formatted document

Follow-up Activities: Word problems are printed in either a worksheet or booklet format and distributed. Students are encouraged to solve each other's problems.

MANAGEMENT

Total Time: will vary

Schedule: 1 class period--students write and edit their word problems
Couple of weeks: Students type their word problems into a formatted document

Things to watch out for: Before students type their problems into the computer, they should first exchange them with fellow classmates to see if the problems are solvable and if they make sense. Proofread carefully.

TEACHER PREPARATION

List of instructional materials:
- Textbook and other sources to teach the principles of solving word problems
- Computer
- Printer

Teacher "To Do" list:
- Look at and analyze various types of word problems
- Focus student attention on important information that needs to be included in solvable word problems--all the various components necessary to make them make sense
- Model by working a problem together on the overhead--point out the processes and changes that take place in creating problems which make sense

SAMPLE WORKSHEET
WORD PROBLEMS BY PERIOD 7

1. John works five days a week. He works three hours each day and earns $3.50 per hour. How much money will he earn on his working week?
by Joe Bronfman

2. Stadium manager wanted to sell 15,000 tickets for the San Francisco 49ers and New York Giants football game. 60% of the tickets were sold in advance. The other 40% were sold at the game. How many tickets were sold in advance?
by Matt Hagen

3. Jennie wanted to buy some shoes. The shoes were 50% off of the original price, which was $38 dollars. How much were the shoes?

4. Say you had some peanuts. Someone took half of them +3, then half of them +2, then half of them +1, and you ended up with 6. How many did you start with?
by Chris McElhaney

5. Stacy weighed 94 lbs. She ate 50 lbs of margarine and 2 lbs. of toothpaste. She was very hyper after eating, so she ran 4-1/2 miles. From running she burned off 28 lbs. How much does she weigh now?
by Sarah Kelly

6. Benny bought a car for $8,000, she paid a down payment of 1/4 of the price. She got $1,500 cash back and the interest is $10 a month. She pays $510 a month, how long would it take her to buy the car?
by Jesse Coulter

7. Joe had 3/4 yards of rope, and his friend used 1/2 yard of rope to make a treehouse, how much rope did Joe have left?

8. Cassie went shopping and bought a shirt for $7, a pair of shorts for $12, and socks for $2. Her parents said they would pay for 1/3 of it. How much did she have to pay?

9. Alex and Scott were meeting at the movies. Alex left at 3:00, he lives 15 blocks away, he got there at 3:30. Scott left also at 3:00, he got to the movies at 4:00 and found Alex. They move at the same speed, so how many blocks does Scott live away from the move theater?

10. John and Shane went to the skateboard show. John had $2.89, and Shane had $4.09. John wanted to buy a new elephant-key for $3.00, so Shane loaned him 11 cents. Then Shane bought some grip tape for $2.10 and some bolts for 65 cents. How much money did Shane have left?
by Alex Dawson

11. Joel went to the arcade. He played 112 games. 3/4 of the games he played cost a nickel, the rest cost a quarter. How much money did Joel spend?
by Marty Larson

Patti Denny
Chapman Elementary School
1445 N.W. 26th
Portland, Oregon 97210
280-6295

DIALOG JOURNAL WITH AN ELECTRONIC TWIST

Mrs. Denny's third grade class has the whole world at their fingertips, well almost...as the year rolls by they will be communicating with Australia via the computer. Part of Patti's philosophy is that students need to be engaged in meaningful activities in order to be excited about learning.

Prerequisite to learning word processing, students receive instruction in proper keyboarding techniques before they have had a chance to form undesirable typing habits. The goal is for students to be able to type at least as fast as they can write. When a student reaches a level of typing ten words per minute, he/she receives a computer license.

From a management standpoint, Patti finds it far easier to train a few students at a time to be "computer experts." Once they have been trained, it is their job to provide assistance and training to other students. So by the time the class is ready to engage in direct communication with their Australian sister school, most of the students will feel comfortable with the computer.

Prior to actual communication with Australia, students engage in activities to increase their awareness and appreciation of this island continent and of the significant role telecommunications plays in their lives. They watch a videotape produced by the students in Australia detailing what life is like in their country. A classroom bulletin board helps identify the locations of Oregon and Australia on the map.

A new awareness about the world develops as students learn about the process of telecommunications. Patti conducts a little experiment with the students so they can see how long it takes for certain types of messages to be delivered. They discuss the speed at which a message sent by regular mail ("snail mail") travels in relation to a message sent down to the school office. In order to emphasize her point, she sends two students down to the office and the class is asked to time the activity.

Complex topics like telecommunications, electronic mail, spontaneous dialog, and direct dialog are defined in terms the students can understand. Students are really enthused about the ability to send messages over great distances by typing them into a computer. They learn to appreciate the role of the written word in the communication process. It is through their written words that people see them and not by their physical trappings. With telecommunications one cannot see the other person, thereby people are judged according to their ability to communicate their ideas and not by how they look.

To further emphasize that telecommunication is a means of sending and receiving messages, the class meteorologist dials the on-line KGW Weather Center to obtain specific weather statistics pertaining to the Portland area. That information is then recorded on a class chart.

The initial letter is typed by Patti while the students dictate the content. Using an overhead projection panel, the students can read what is displayed on the computer screen. While the teacher is typing the letter, the students read and reread each sentence to make sure their ideas are being expressed. Each student contributes a thought or two to the message and some students will point out revisions that they would like to make. By modeling the letter writing process, students can see the added benefits of using a word processor to make changes in their documents. Through this whole procedure, the students are engaged in reading, thinking, and articulating their thoughts in complete, continuous sentences. Used in this manner, the computer becomes a tool facilitating the reading and writing process. Writing is no longer a boring endeavor, but a stimulating and meaningful activity that is used to communicate ideas, not just within a classroom, but also to other countries.

Using Bank Street Writer III, students compose the messages they wish to transmit to a fifth grade class at Sadadeen Primary School in Alice Springs, Australia. One of the established ground rules students must observe is not to use obscene language in their "letters."

Once the novelty of "talking " to the Australian students wears off and the students have found out everything they want to know about each other, they begin writing stories back and forth. One side will start a story, and the other side will add something to it and back and forth it goes. Guessing games are also a great way to promote direct dialog between schools. With telecommunications, anonymity is almost guaranteed, which makes guessing games a fun and meaningful way to learn the process of reading and writing. Each school provides clues as to their identity (for example, we're to the west of the Willamette River) and the challenge is to guess who's at the other end of the modem.

When Patti became interested in long-distance telecommunication, Computer Pals Across the World was able to set her up with an English-speaking country, in this instance, Australia. Computer Pals Across the World, an organization run by Jim Erwin, provides a means of communicating long distance at reasonable prices.

In the future, Chapman Elementary School will be creating their own computer bulletin board called "Chap Kids."

WHAT WORKS FOR YOU?

Using Computers in the Classroom

SUBMITTED BY

Name: Patti Denny

School Address: Chapman Elementary School
1445 N. W. 26th
Portland, Oregon 97210

Phone: 503/280-6295

TARGET AUDIENCE

Grade: 3 and up **Ability Level:** all groups, including dyslexic students

Comments: Students should be taught keyboarding and attain some level of familiarity with computers prior to engaging in this activity

HARDWARE

Type: Mac SE fileserver
Apple IIe

Peripherals: dot matrix printer
modem

Arrangement: The Apple IIe's in the lab are networked. One computer is located in the classroom.

SOFTWARE

Title(s): Microsoft Works 2.0
Bank Street Writer III with telecommunications

Publisher(s): Microsoft
Scholastic

Number of copies: Lab packs and network versions

PROJECT DESCRIPTION

Title or brief description: Dialog Journal With An Electronic Twist

Instructional purpose:
- Teach students the process of communicating
- Whole language reading; intra curricular
- Cooperative learning with electronic pal

Objectives:
1. Clarity--facilitate students in expressing their thoughts clearly
2. Reading/ writing/ spelling/vocabulary--provide students with meaningful reading and writing experiences
3. Geography--learning about people through their written communication

DESCRIPTION OF THE LESSON

Pre-activities:
- Show students a videotape about Australia
- Teach students keyboarding techniques
- Letter writing
- Familiarizing students with computers/ bulletin boards

Computer Activities:
- Word processing-- writing messages to be transmitted
- Where in the World is Carmen Sandiego?

Follow-up Activities:
- Students will make a video and send it to Australia
- Compile a booklet on American Slang

MANAGEMENT

Total Time: ongoing process throughout the year

Schedule: 1/2 hour per child plus 5 min. to say good bye

Things to watch out for: Cost for long-distance communications. Language paramaters need to be established (i.e., no foul language). Secure copyrighted software so it cannot be uploaded or downloaded. Be vigilant for viruses, especially with a modem.

TEACHER PREPARATION

List of instructional materials:
- Maps, textbooks, library books
- Computer/word processing software
- Overhead projection panel
- Computer
- Videotape/VCR

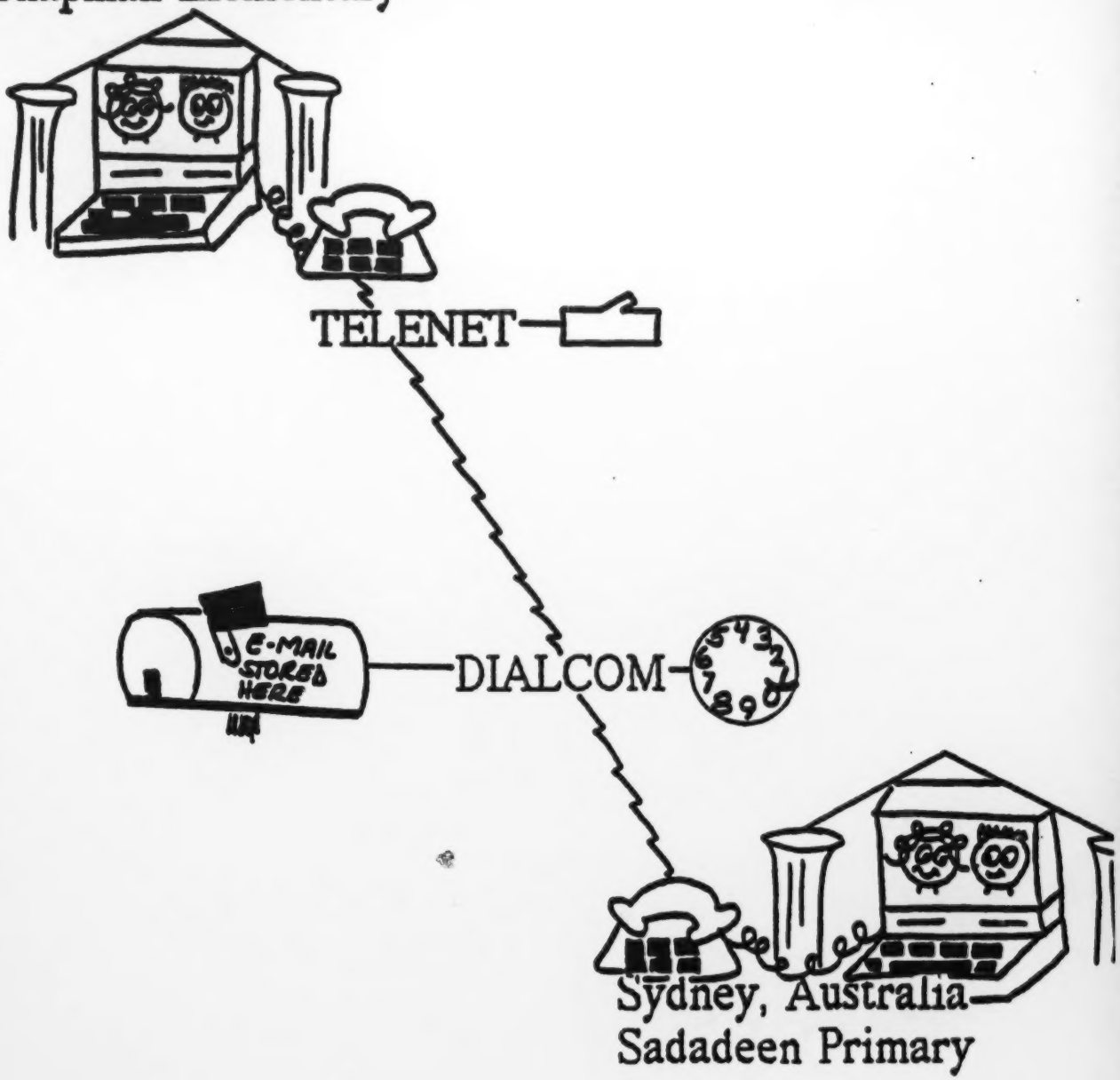
Teacher "To Do" list:
- Make sure computers are working
- Boot Bank Street Writer III (initially, at a later date students take over this task
- Batch student files--put all student letters on one disk at the end of the day
- Photocopy letters for students
- It helps to train a few students so that they in turn can train and assist others

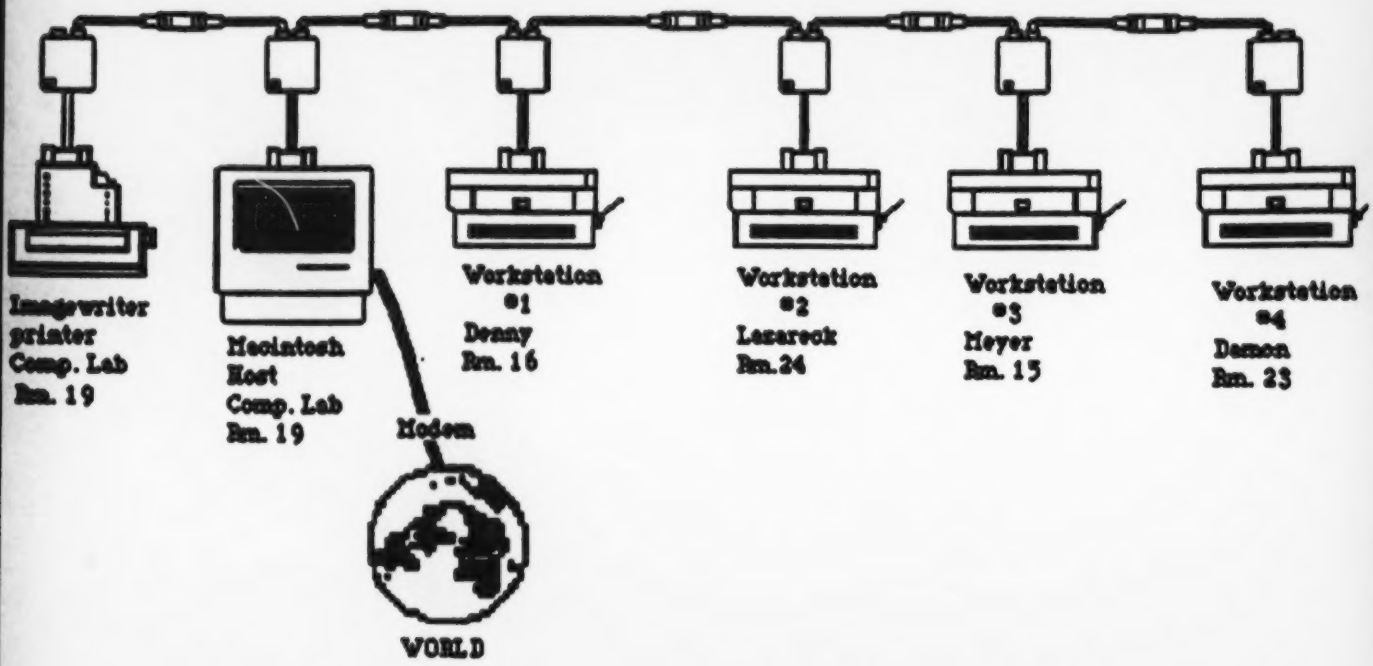
Additional Note: *Computer Pals Across the World*, an organization run by Jim Erwin, makes it possible for Patti Denny's class to communicate with Australia.

CHAPMAN "*Computer Pals Across the World*"

CHAPMAN
TELECOMMUNICATION
COMPUTER PROJECT

Portland, Oregon U.S.A.
Chapman Elementary




Imagewriter
printer
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Modem
WORLD
Workstation
#1
Denny
Rm. 16
Workstation
#2
Lazarock
Rm.24
Workstation
#3
Meyer
Rm. 15
Workstation
#4
Damon
Rm. 23

To: WEW038 (142:WEW038)
From: EWP018 Delivered: Thu 9-Mar-89 17:55 EST Sys 6007 (106)
Subject: MORE LETTERS
Mail Id: IPM-6007-890309-161271212

--More--

Hi My name is Tia,
I live in Alice Springs at 11 Rief Ct. My phone number is 527247. I have two pets, a dog called Turby and a rabbit called Flopsy. We are going to get a bird. We mostly have hot weather. I'm going to play netball tomorrow.
We have lots of gaps around here such as Simpson Gap, Emily Gap, and lots more.
We have a place called the Telegraph Station. It has water to swim in and lots of rocks to climb on.
I have also climbed Ayers Rock which is a huge rock.
There is another place where I've been, its called Kings Canyon. I've climbed it too.
Kathryn W. is my best friend and she sits next to me at school. I love animals and I want to breed them and keep a horse.
My favourite food is corn chips and steamboat which is Chinese food. My favourite dessert is chocolate ice cream with strawberries. We grow mulberries, oranges, mint and pomegranets. I have a very small bike and need another. I am nine years old and have a younger sister named Sam who is six years old. We havae seperate rooms and I usually read in bed and Sam has a tape on.
Bye for now,
--More--

Tia Spafford.

To the students,
How is it in America? Our native animals are koalas, kangaroos, platypus, cockatoos, wombats, numbats and possums. The country around Alice Springs is very dry. Sometimes the Todd River floods, but the rest of the time it is a dry river bed. It is very hot now as it is the end of summer, but in America it would be winter.
I am nine years old this year. My hobbies are horse riding, collecting stamps reading, swimming and gardening. I have two goldfish. My sister is nineteen. She will be twenty this year. She gave me her horse called Traveller. I have one persian cat who loves getting brushed but is a real scaredy cat. We have lots of vegetables and fruit in our garden. We pick some watermelons for breakfast. We also have carrots, beans, tomatoes, rockmelons and honeydew melons growing in the garden. You call rockmelons canteloupes, but they taste the same.
There are lots to see and do around Alice Springs. We have been living here for just over twelve months and have seen many interesting places. Last weekend we went to Ross River
--More--

Homestead just outside of Alice Springs (two hours driving on an open road) and went horseback riding. I was grooming the horses. I also went swimming in the saltwater pool as the river was dry.
Every Saturday I go to jazz ballet classes which I enjoy very much. It's fun but very tiring. We should be performing on stage in June, but I will be on holidays in Queensland then. I hope you enjoyed this letter.
Your faithfully,
Rebecca Eckert.

G'day,
My name is Paul and I live at Alice Springs and it is hot. My sport is baseball and my coach is American. I play cricket at school and two square as well. My friend Jethro is the fastest runner in the class. Alice Springs is in the middle of Australia.
From Paul Christensen.

Dear Students,
G'day brothers. I live at 7 Glass Court Alice Springs N.T. My name is Kyle Anthony Burns. A am 9 years old. At the back of my house we have a swimming pool and it is very big. My
--More--

hobbies are hockey, football, martial arts and sometimes I like to play tennis or swim. My phone number is (089)523036. Sometimes I like to go to the blue light disco in town.
From Kyle Anthony Burns.

Hi Mate!
How are you around there?
My name is Benjamin Carruth and it is very hot here in the big Alice. What is your name? Well enough of that right. Alice Springs is always hot except winter nights, they are freezing. There are kangaroos and cockatoos and birds of every kind. I live on a farm, we have ducks, geese, turkeys, peacocks, dogs, cats, birds, peewees, and next door there's a horse. We can ride it sometimes. There's a lot of bush and scrub. We live near the MacDonald Ranges. It's boring sometimes. Oh well see you around.
Bye! From Benjamin.

G'day mate! How ya going? I come from N.T. which stands for the Northern Territory. In Australia we have heaps of Aborigines. In ALice Springs which is where I come from, most of the Aborigines live in the Todd River which most of the time doesn't flow. Did you know that Alice Springs is a
--More--
hot desert? In winter here it doesn't snow but it is COLD. Australia is famous because it is the biggest island in the world. I just forgot to tell you my name. My name is Kullun Gay Willock. My teacher's name is Mrs Crickmore. In Australia we have all sorts of animals like, Black-headed Pythons, Olive Pythons, Centralian Carpet Snake, Whip Snakes, King Browns, Kookaburras, Emus, Kingfishers,

COMPUTER PALS

Sample Writing Activities

1. Have the class brainstorm a list of "one-liners" that express what their school & community are like.

2. Have the class brainstorm a list of questions to send to their sister school. Have them answer their own questions and send those at the same time.

3. Have students write the beginning of a story (a page or so in length) and have the students at their sister school complete the story.

4. Have students research legends or "tall tales" of their region and write up summaries.

5. Have the students write about a person they respect and explain why.

6. Have the students write news articles that interest them about their school, community, state, country or the world.

"Hands on around our world"

Telecommunications Integration Ideas
Computer Pals Across the World

1. **Outrageous Opinions** - Give students assignments of writing up how they feel about various topics. The more outrageous the better. Follow-up could include defending their opinions after others challenge.

2. **Pointed Quotations** - Assign a topic and let students gather relavent short quotations through library research. Gather a collection from various "sister schools" and publish the final list.

3. **Say What?** - Gather a list of slang from the different regions or countries (include pronunciation, definitions and location). See how the words in one area compare to another.

4. **Book Data Base** - Have students post plot summaries and reviews of books they have read. Build a central data base and share this periodically with updates.

5. **Dear Santa** - Younger students (ages 5-7) compose letters to Santa which are forwarded to older students (ages 11-12 or ??) who answer.

6. **Literary Magazine** - Student writing from different grade levels, schools and countries assembled and published in hard copy by one assigned school. Materials submitted to the clearinghouse by modem.

7. **District Newspaper** - Each school would be responsible for a section of the paper. Students store articles on disk and forward them onto the school responsible for assembling that issue.

8. **Future News** - Collaborate articles for a futuristic newspaper.

9. **Best Endings** - Post a short story. Allow students to create and post their own endings to the story. Public posting encourages creative variations.

10. **Folktales and Superstitions** - Students write folk stories, legends or superstitions from their parent's or their own childhood.

11. **Neverending Story** - Start a story with a beginning paragraph. Students log on and post another paragraph that continues the story while retaining the flow and style. Story will take many turns and twists before it comes to a natural end.

12. **Chess** - Organize teams of players. Chess board set up at each school. Moves are sent over a modem to team captains.

13. **Local Dishes** - Use nutritional facts to design a menu. Each class will contribute an original recipe.

14. **Debate** - Get three schools to participate. Announce a topic. Have two of the schools provide opening statements (limit of 100 words), rebuttals, closing statements, etc. Publish each part online and allow schools one day to respond. The third school would evaluate arguments and judge the winning team.

Other Titles -

Academic Decathalon
Super Sleuth
Trivial Pursuit
Mystery Chemical
Weather and Natural Disasters
Acid Rain
Proverbs
Stock Exchange
Foxfire Project
That Wonderful Year
Dear Abby
Email 2009
Letters from Abe (from Winston, ??)
Nader Online
Kid's Eye View
Old News
Games People Play
Kidwork
Travel Brochure
Job Survey
Holiday Poll
What's New?
Computer Programs
Dating Service

Dan Stanton
Sabin Elementary School
4013 N. E. 18th
Portland, Oregon 97212
280-6181

SABIN DEMONSTRATION SCHOOL PROJECT

Entering Dan Stanton's fourth/fifth grade class, one cannot help but feel the energy generated by students excited about learning. With the utilization of computers and other media, students are given the opportunity to experience heuristic rather than algorithmic approaches to learning. They are guided through each step of the process in exploring the infinite possibilities of taking charge of their own goals, ideas, and aspirations. In setting goals, they must decide what steps they need to take in order to achieve a desired outcome, and in order to determine if they have reached their goal, they need to formulate realistic criteria to measure their progress.

At the beginning of the school year, Dan Stanton used Macvision to take pictures of each student to show them the various ways in which technology could be applied to his/her life. Each student wrote his/her own affirmation to attach to their picture and decorated each side with handprints in a color of his/her own choosing. Through the use of art, color, and language students were given a chance to express who they are and what they hope to be.

Before students can engage in independent project activities, they must first learn how to learn. This task is accomplished by teaching students the analytical process step by step, continually reiterating and restating concepts so that process words will acquire meaning to them at a higher-cognitive level.

Once students have become comfortable with the process of organizing information, asking questions and seeking answers, they are ready to apply these skills by creating and developing their own project ideas. Each student is held accountable for his/her progress through the use of a project checksheet (an expanded form of the checksheet is attached). In this manner, the teacher is kept apprised of the situation and can provide individualized instruction based on student needs.

Students are encouraged to work together in a cooperative manner, providing assistance, support, ideas, and constructive feedback to each other, thereby strengthening the cohesion of the group.

The computer, used as a powerful tool, enables students to communicate their ideas in a less threatening way and to produce an impressive product, which does the author proud. As students progress down their Check Sheet, they first write everything out by hand before entering the information into the computer. Each student is provided with a data disk on which he/she can store his/her word processing files; he/she is responsible for his/her own data disk. Dan Stanton finds it beneficial to train a few students at a time on the computer. In turn, these "computer experts" provide training and assistance to other students, and pretty soon, the whole class knows how to use the computer. Later on, they will be telecommunicating with other schools across the state.

Dan Stanton also uses a Macintosh Plus with a hard disk to generate lesson plans, newsletters, keep track of student work, attendance and lunch count, and a host of other tasks. By using the computer himself, he is modeling how computers can be used as a powerful tool enabling the user to reach for even higher goals.

WHAT WORKS FOR YOU?

Using Computers in the Classroom

SUBMITTED BY

Name: Dan Stanton

School Address: Sabin Elementary School
4013 N. E. 18th
Portland, Oregon 97212

Phone: 503/280-6181

TARGET AUDIENCE

Grade: 4th & 5th **Ability Level:** all groups

Comments: Keep in mind that all children can learn and all can be taught

HARDWARE

Type: Apple IIe
Mac Plus with hard disk

Peripherals: Imagewriter II printers

Arrangement: Five Apple IIe computers are located in the classroom; a Mac Plus sits on the teacher's desk along with a Laser II NT printer

SOFTWARE

Title(s): Microsoft Works 2.0
Bank Street Writer III
MacVision

Publisher(s): Microsoft
Scholastic
Koala Techmologies Corp.

Number of copies: One per machine

PROJECT DESCRIPTION

Title or brief description: Sabin Demonstration Project

Instructional purpose:
- Teaching students how to learn
- Learning how to teach, which in turn, helps them learn about learning
- Cooperative learning

Objectives:
1. To become independent, intrinsically motivated students
2. To take an initiative for learning. Be able to entertain change.
3. Cooperative learning

DESCRIPTION OF THE LESSON

Pre-activities:
- Small group, whole group cooperative activities
- Positive interdependence
- Individual accountability
- Inferential thinking
- Organizing information by categories/attributes

Computer Activities:
- Word processing: formatting, saving, deleting, retreiving, moving text.
- Command functions and features (i.e., thesaurus, spelling checker, calculator)

Follow-up Activities:
- Using the process across the curriculum: reading, language arts, writing, spelling, social studies, science, and math

MANAGEMENT

Total Time: ongoing process throughout the year

Schedule: 2-1/2 hours/day in teaching each step of the process

This arrangement helps in individualizing class assignments and homework.

Suggestions: Be willing to entertain ambiguity. Stop being a clerk in the classroom; you can't take responsibility for all tasks and keeping track of disks. Allow students to assume responsibilty for their own learning (and disks). There's no need to grade everything--anectodal records become more meaningful.

TEACHER PREPARATION

List of instructional materials:
- Books, magazines, newspapers, encyclopedias
- CD-ROM
- Project checklist
- Computer
- Videotape/VCR
- Word processing software/other software
- Data disks
- Student folders

Teacher "To Do" list:
- Ask questions: what is it you want to accomplish?
- Be committed to your decision once you decide to do it
- Teach the process away from the computer
- Move into computer activities so students can apply the process
- It helps to train a few students at a time on the computer so that they in turn can train and assist others

Additional Note: ***All*** students can benefit from learning problem-solving skills and a TAG-program approach to learning.

Empowering Students for the Information Age

by
Dan Stanton

Sabin Early Childhood Education Center is a Portland Public School located in Northeast Portland. Within the Education Center is found the Sabin Demonstration School Project, which **empowers students to learn how to learn.** Students in the Project develop an understanding of the tools that are needed to set goals, ask good questions, gather and organize information, write reports, create media and teach others what they have learned. **Students are taught how to use technology and employ it in their learning -teaching processes.** As with successful people everywhere, the Sabin Demonstration School Project **students have mentors. Parenting classes are an integral attribute** of the Sabin Demonstration School Project. These classes bring together parents, the school, and the community. As a whole the Sabin Demonstration School Project **allows students to connect who they are, with what they know, and the community at large.**

Students are guided through their first project with each step being explained by the teacher. Care is taken to make sure that each student experiences success with the first project. Goals and criteria are jointly developed by the student and the teacher. It is important that students as knowledge navigators, begin to decide where they are going and how they are going to get there. These goals and criteria affect their progress, performance, production and evaluation. At the end of the exploration it is important that students be evaluated in ways that they feel and see as appropriate and legitimate, based on the criteria that they set up at the beginning of the project. This helps them set higher standards of excellence for their next exploration. They begin to see and guide their own development as they outgrow old standards.

Questioning and observation take place in the following sections of the learning-teaching process. Students spend time developing questions that they have about their interest area. As students research, they write down more questions that occur to them about their interest area. In addition, they write down facts that they think are important and/or interesting. Learning how to ask questions helps the student understand and verify ambiguous information. Students that have divergent thinking skills tend to like these activities.

As the information is collected from card catalogues, books, periodicals, electronic data bases, CD ROM, video disks, and the community, students begin to represent, compare, classify and order information. As students begin to understand and use these skills, they are requested to show or teach other students how to organize information. It is emphasized that students can record information in the form of statements, outlines, drawings, models and electronic media. The different media may help students compare, classify and order information naturally, with their own intuitive sense.

Through the interview process students gather more information about real life experiences. They are able to establish the accuracy of information that may be biased, false, or ambiguous. Being able to communicate, interact, and ask effective questions is a basic skill necessary for every individual in our information society. Students are learning to interact and put questions into their own words; they are critically listening to answers, are using follow-up questions, and are taking notes. This experience is usually unique in several ways. One, students go on a field trip in small groups or individually with a chaperone. Students feel special and get a one on one experience with someone that they consider an expert in their interest area. Students may get to perform tasks in this "real" situation. By the time the student gets this far in the process their are an expert. The person being interviewed is always impressed by the students' knowledge. Student interviews are followed up by having them review a video tape of their field exploration to evaluate the session and see themselves in "action". Up to this point of the process most of the students' experiences have been cognitive divergent in nature. They are now asked to brainstorm a list of words and ideas on a sheet of paper or on a computer. From this list they will pick a topic. Their learning-teaching process now provides them with cognitive convergent thinking experiences that help the students to organize and focus.

Students take the Brainstorming information and identify the central element, main idea or "seed" as the topic within the interest area. Students synthesize information by listing the most important ideas for their topic. This comprises their outline. Students then prioritize the ideas and add details to complete their rough draft reports. Each report is defined by the depth of student knowledge and skills. It is understood that the report will not be read orally, but used as a place to write and organize information. In the final copy the report may be read by other students in school that have an interest in the topic.

Students are required to learn appropriate care and use of technology. Editing by the student is easily facilitated through the use of a computer. Students are asked to make corrections on their respective drafts. Some students may have 10 or 15 editing sessions. Peer editing is strongly encouraged. It is best if two or three skills are practiced through each editing session. Media may take the form of film strips, videos, photographs, models, recordings, skits, advertisements, published books, poetry, sculptures. For the most part students determine when it is appropriate the develop the media. In many instances developing media is a preferred means of collecting and recording data. Media is also developed and used by the students to make their final presentations. The development of media by the student makes the activity an experience that engages the student in high level thinking. The development of media is as much a culminating activity as the presentation.

When projects are complete students have developed three items, a report, supporting media and a presentation. Students may choose the audience from any grade or group in the school. They are required to set the presentation up with the teacher (s) and the facilitator. The presentation is followed by a question - answer period. The audience may be requested to write down their questions. Students let the audience know that they want to be evaluated on their presentation. The audience is asked to tell or write what they liked about the students presentations. The audience is always asked to give suggestions for improvements that could be made.

Throughout this entire process students have mentors that come and encourage them. Mentors come to school about twice a month. Students and their mentors may have lunch together and talk about the future, problems at school or home, or help editing a paper. The mentors help the students' make the connection between school and the community at large. Students are always excited and look forward to having their mentor come visit.

If students are to connect who they are, with what they know, and the community at large, a parenting class is a necessary component. Speakers from many community and school organizations are invited to speak and lead discussions with parents. Topics may include everything from energy conservation in one's home, to neighborhood cleanup, to school issues including discipline, and the use of technology in the learning-teaching process. The Sabin Demonstration School Project is by all accounts successful at empowering students to learn how to learn. Students understand, use, express confidence and knowledge about the learning teaching process. Students are able to use technology with ease and confidence as a learning-teaching tool. The mentors have played an essential role enfranchising students and building self-esteem. Parents are enthusiastic about their child's attitude toward school and have become more involved with their children in the education process. The Sabin Demonstration School Project is very successful instilling enthusiasm in students.

Dorothy Wold
Whitaker Middle School
5700 N. E. 39th
Portland, Oregon 97211
280-5620

AM I GETTING 100%?

Dorothy Wold, teacher of home economics at Whitaker Middle School, always has creative ways of incorporating the computer into her instruction. Of the many ideas and projects in progress, we focused on one dealing with nutrition and health. Her students (sixth-eighth graders) ranging in abilities, enjoy using the computer and will sometimes come in on their lunch hour to use it.

Her lesson, entitled, "Am I getting 100%?" looks at the nutritional value of food students typically eat. Each student is asked to record all the food that they consume for one day. Once they obtain this information, they look up each food item and record its identification number from the food chart. When they complete this task, they can then input the data into the computer. The computer then provides the student with a printout analyzing his/her diet in relation to recommended allowances based on their age and sex.

If a student cannot find a particular food item, information about it can be input into the program's database. Each diet analysis is then displayed on the bulletin board so that students can compare the varying diets.

"Oh, I knew I shouldn't have eaten that!" is just one of the many enthusiastic remarks heard as students receive their computer printouts. Students are very intrigued to find out information about what they have been eating. They become aware of the nutritional value of the foods they eat and how it affects their health.

WHAT WORKS FOR YOU?

Using Computers in the Classroom

SUBMITTED BY

Name: Dorothy Wold

School Address: Whitaker Middle School
5700 N. E. 39th
Portland, Oregon 97211

Phone: 503/280-5620

TARGET AUDIENCE

Grade: 6-8 **Ability Level:** all groups

Comments: Works well in individualized programs and with at-risk students

HARDWARE

Type: Apple IIe **Peripherals:** Epson printer

Two disk drives are recommended, but program will also work with only one disk drive

Arrangement: One computer in classroom

SOFTWARE

Title(s): What Did You Eat Yesterday? **Publisher(s):** The Learning Seed
MenuCalc

Number of copies: One, plus one backup; includes a food chart

PROJECT DESCRIPTION

Title or brief description: Am I Getting 100%?

Instructional purpose:
- To teach nutrition
- Facilitate students in making wise nutritional choices

Objectives:
1. Keep a record of their food intake for one day
2. Analyze their food intake to see if they are getting their daily recommended allowances for their age group and sex
3. Type data into computer program and print it out
4. Analyze the output to see how they are doing nutritionwise

DESCRIPTION OF THE LESSON

Pre-activities:
- Instruction about health and nutrition
- Students record their food intake for one day on a chart, checking off the appropriate food group category for each item
- Find each food item on the food list and record its identification number on their record sheet

Computer Activities:
- Type in food numbers
- Print out results

Follow-up Activities:
- Students complete a worksheet asking them questions about their diet analysis (i.e., What recommendations did the computer make? What nutrient are you lacking? What food item had the highest calorie value?)
- Students contribute their printouts for display on the bulletin board

MANAGEMENT

Total Time: 2 days plus individual time at the computer

Schedule: 65 minutes to teach lesson on health and nutrition. Students schedule computer time

Suggestions: Explain to students about what they need to tell the computer when it asks them for slot numbers and whether or not they want a printout. Explain what the questions mean.

TEACHER PREPARATION

List of instructional materials:
- Computer
- *What Did You Eat Yesterday?* computer program
- Food Chart booklets
- Student record sheets
- Printer

Teacher "To Do" list:
- Make enough copies of record sheets and food chart booklets.
- Prepare a bulletin board entitled "Am I Getting 100%?"

Additional Note: If a student cannot find a particular food item on the list, the information about the item can be added to the computer database. This will enable students to analyze the foods they cook in class.

Am I Getting 100%

by Dorothy Wold

Name:_____
Period:_____
Date:_____

	Number	Breads & Cereals	Meats & Poultry	Fruits & Vegtables	Dairy	Misc.
BREAKFAST						
SNACK						
LUNCH						
SNACK						
DINNER						
SNACK						
TOTALS:						

Caren White
Gilbert Park Elementary School
13132 S.E. Ramona Street
Portland, Oregon 97236
252-2900

ANIMATION STATION:
Mapping the Western Hemisphere

Students in Caren White's class have been using Animation Station, a graphics program, to construct maps of the Western Hemisphere. Caren believes in using the computer in conjunction with what she teaches in class. The students go to the lab once a week and, in addition to using Animation Station, part of their lab time is spent in learning proper keyboarding techniques.

Starting in the first grade, students at Gilbert Park Elementary School are introduced to the computer. By the time they reach the fifth grade they already know the procedures for proper disk handling and management. Caren instructs students in using Animation Station, and emphasizes the need for students to develop proper keyboarding skills before they have had a chance to form bad typing habits. Instructional videotapes are available to those students needing a quick review in using the program.

The first few days of the lesson are spent in becoming acquainted with the various tools and features in Animation Station. Students, working in groups of two, draw their maps while looking at a picture in their textbooks. Several fonts are available with which the students can label the continents. Landforms, rivers, and mountain ranges can easily be identified with different colors. Students are encouraged to help each other should they encounter some problems but generally, as their skills increase, they become more adept in solving their own problems. Finished maps are printed and displayed on the bulletin board.

Marge Brickley, also a teacher at Gilbert Park, has used Animation Station with her students to illustrate publications of collected student stories. She has noticed that students really seem to enjoy creating their own graphics. The many uses of Animation Station, make it a very versatile program, which students seem to enjoy using over a period of time. Students who were studying the United States, each picked a state and drew its state flag.

Since the monitors are in color and some of the graphics are printed in black and white, students are at times surprised to see that the graphic on paper looks less defined than it did on the screen. This phenomenon led Stan Torrence, now retired, to develop a lesson plan for teachers and students dealing with the concept of color value and balance in designing graphics to be printed in color or in black and white. Deciding how graphics will be printed (either as color, or black and white) will affect the selection of onscreen colors. The final product's eye appeal depends on carefully choosing colors to bring out the maximum detail of the drawing.

WHAT WORKS FOR YOU?

Using Computers in the Classroom

SUBMITTED BY

Name: Caren White

School Address: Gilbert Park Elementary School
13132 S.E. Ramona St.
Portland, Oregon 97236

Phone: 503/252-2900

TARGET AUDIENCE

Grade: 5th and 6th
can be adapted for 3rd and 4th graders

Ability Level: Any ability level, great for visual learners

Comments:

HARDWARE

Type: Commodore 64 with color monitors

Peripherals: dot matrix printer, computer drawing pad, similar to a Koala Pad

Arrangement: 14 stand-alone computers are located in the computer lab

SOFTWARE

Title(s): Animation Station

Publisher(s): Design Lab

Number of copies: One for each computer

PROJECT DESCRIPTION

Title or brief description: Mapping the Western Hemisphere

Instructional purpose:
- Reinforce concepts in geography
- Facilitate problem solving
- Application to all aspects of the curriculum

Objectives:
1. Acquaints students with the shape of the continents
2. Helps students learn about geography
3. Encourages students to solve problems
4. Develops creative skills

DESCRIPTION OF THE LESSON

Pre-activities:
- Study geography of the Western Hemisphere
- Watch videotape on how to use Animation Station
- Some intruction in keyboarding

Computer Activities:
- Students draw their maps over a period of several days
- Print out results

Follow-up Activities:
- Later students will be studying Latin America. They will construct detailed maps identifying each country, various cities, rivers, and mountain ranges.

MANAGEMENT

Total Time: 7 days **Schedule:** 1 hour per week with 30 minutes of each lab time devoted to keyboarding

To promote cooperative learning, students work with partners.

Suggestions: Make sure students know how to use the equipment and software program. Before printing, be sure to save student work. When storing, keep the disks away from the drawing pads, otherwise they might get damaged. Discuss balance of color and what effect it has on graphics when they are printed in color or in black and white.

TEACHER PREPARATION

List of instructional materials:
- Computer
- *Animation Station*
- Printer
- Videotape
- Social studies textbooks
- Individual student data disks

Teacher "To Do" list:

ANIMATION STATION

Mapping the Western Hemisphere

by Caren White

Day 1 & Day 2

- Load Disk
- Use CIRCLE command to draw globe
- Use LINE command to draw the equator
- Use SKETCH command to begin outlining continents
- Don't save work

Day 3

- Repeat day 2 lesson (by now student's sketches will be more accurate)
- Save on formatted disk

Day 4

- Retrieve map from data disk
- Use ZOOM command to correct errors in sketch
- Use ZOOM to add mountain ranges, rivers, and other details
- Save

Day 5

- Retrieve map from data disk
- Use TEXT command to label continents, oceans, equator, etc.
- Use ZOOM for continued detail modifications/editing
- Save

Day 6

- Balance colors as the maps will be printed out in black and white
- Change background to white
- Use FILL to color in oceans, land, etc. (this can also be done on day 4)
- Final check for detail
- Save

Day 7

- Print
- Display

COMPUTER GRAPHICS
APPLICATION SUGGESTIONS:

SCIENCE

Different types of clouds
How storms develop
What causes earthquakes
Why and how volcanoes erupt
How mold develops
The life cycle of ...moth...?
How corn grows
How seasons change

SOCIAL STUDIES

Make a real or imaginary map
Make symbols for a map or chart
Create a pictured timeline
Make a graph showing imports and exports
Illustrate population density on a map
Illustrate natural features of a state or country
Illustrate a cutaway view of a mining operation
Illustrate the political structure of a democracy

MATHEMATICS

Illustrate a basic math concept using apples
Illustrate the basic shapes
Illustrate How triangulation works
Demonstrate finding area and perimeter
Show percentages with a pie graph
Create a repeat design using Logo
Demonstrate comparative units of measure
Illustrate the binary system

LANGUAGE ARTS

Illustrate a book report
Illustrate a story you have written
Make up a commercial
Make up a simple illustrated dictionary file
Write a short story using pictures to replace spelling
Design a magazine advertisement for a favorite book

HEALTH

Show a cutaway view of the heart
Demonstrate how a muscle works
Illustrate organs of the body
Demonstrate a first aid procedure
Plan a balanced meal in picture form

Show how disease is spread
Demonstrate a good grooming tip
Illustrate the steps in an aerobic exercise

ART

Make a decorated invitation
Create a logo for a class project
Design a greeting card
Plan a weaving pattern
Paint a picture from memory
Create a picture from a sketch
Depict a feeling of "calm" in a picture
Illustrate your idea of a "good sense home"

Products Mentioned In This Report

Broderbund 17 Paul Drive San Rafael, California 94903-2101 415/492-3200	*Printshop* *Where in the World is Carmen Sandiego*
CLARIS Corporation P. O. Box 526 Santa Clara, California 95052 408/987-7397	*AppleWorks*
Computer Pals Across The World Jim Erwin 4974 S.W. Galen Lake Oswego, Oregon 97035 503/697-4080	
Designware 345 Fourth Street San Francisco, California 94107 415/ 546-1866	*Spellicopter*
Koala Technologies Corporation* 3100 Patrick Henry Drive Santa Clara, California 95052-8100	*MacVision*
The Learning Seed 21250 N. Andover Road Kildeer, Illinois 60047 312/397-4470	*What Did You Eat Yesterday?* *MenuCalc*
Microsoft Corporation 16011 N.E. 36th Way Box 97017 Redmond, California 98073-9717 206/882-8080 800/227-4675 (sales)	*Microsoft Works* *Microsoft Word*
Scholastic 730 Broadway New York, New York 10003 212/ 998-5622 212/ 505-3561	*Bank Street Writer III*
Suncom 290 Palatine Road Wheeling, Illinois 60090 312/459-8000	*Animation Station*
Time Works 444 Lake Cook Road Deerfield, Illinois 60015 312/ 948-9202 800/535-9497	*Publish It!*

*No longer in business.